The Plant Journal (1999) **18**(6), 693–697

Author index

Aeschbacher, R.A. *see* Wille, P.A.
Ahmad, M. *see* Ninu, L.
Aitken, A. *see* Moorhead, G.
Allen, G.C. *see* Ülker, B.
Allen, G.C. *see* Vain, P.
Amasino, R.M. *see* Aukerman, M.J.
Andersen, M. *see* Næsted, H.
Anthony, R.G. and Hussey, P.J. *Double mutation in* Eleusine indica *α-tubulin increases the resistance of transgenic maize calli to dinitroaniline and phosphorothioamidate herbicides* 669
Apel, K. *see* Melzer, S.
Araki, T. *see* Taoka, K.-i.
Araya, A. *see* Figueroa, P.
Aukerman, M.J., Lee, I., Weigel, D. and Amasino, R.M. *The Arabidopsis flowering-time gene* LUMINIDEPENDENS *is expressed primarily in regions of cell proliferation and encodes a nuclear protein that regulates* LEAFY *expression* 195
Autran, D. *see* Laufs, P.
Axtell, M. *see* Erickson, F.L.

Baba, K., *see* Toyoshima, J.
Baker, B. *see* Erickson, F.L.
Barbier-Brygoo, H. *see* Ephritikhine, G.
Bardat, F. *see* Jeannette, E.
Benfey, P.N. *see* Pysh, L.D.
Biela, A., Grote, K., Otto, B., Hoth, S., Hedrich, R. and Kaldenhoff, R. *The* Nicotiana tabacum *plasma membrane aquaporin NtAQP1 is mercury-insensitive and permeable for glycerol* 565
Bock, A. *see* De Santis-Maciossek, G.
Boller, T. *see* Felix, G.
Boller, T. *see* Gómez-Gómez, L.
Boller, T. *see* Wille, P.A.
Bouchez, D. *see* Pysh, L.D.
Bouly, J.-P., Gissot, L., Lessard, P., Kreis, M. and Thomas, M. Arabidopsis thaliana *proteins related to the yeast SIP and SNF4 interact with AKINα1, an SNF1-like protein kinase* 541
Bouzayen, M. *see* Zegzouti, H.
Braam, J. *see* Campbell, P.
Brown, J.W.S. *see* Simpson, C.G.

Caboche, M. *see* Ephritikhine, G.
Calderon-Urrea, A. *see* Erickson, F.L.
Camilleri, C. *see* Pysh, L.D.
Campbell, P. and Braam, J. In vitro *activities of four xyloglucan endotransglycosylases from* Arabidopsis 371
Casal, J.J. *see* Cerdán, P.D.
Cashmore, A.R. *see* Ninu, L.
Cerdán, P.D., Yanovsky, M.J., Reymundo, F.C., Nagatani, A., Staneloni, R.J., Whitelam, G.C. and Casal, J.J. *Regulation of phytochrome B signaling by phytochrome A and FHY1 in* Arabidopsis thaliana 499
Chandler, J. *see* Melzer, S.
Charrier, B., Foucher, F., Kondorosi, E., d'Aubenton-Carafa, Y., Thermes, C., Kondorosi, A. and Ratet, P. Bigfoot: *a new family of MITE elements characterized from the* Medicago *genus* 431
Chen, C. *see* Yang, P.
Chen, Z. *see* Yang, P.
Christou, P. *see* Vain, P.
Chua, N.-H. *see* Ishige, F.
Chye, M.-L., Huang, B.-Q. and Zee, S.Y. *Isolation of a gene encoding* Arabidopsis *membrane-associated acyl-CoA binding protein and immunolocalization of its gene product* 205
Clark, G.P. *see* Simpson, C.G.
Coen, E. *see* Cubas, P.
Cole, D.J. *see* Cummins, I.
Cornel, D. *see* Jeannette, E.
Corr, C. *see* Erickson, F.L.
Cotelle, V. *see* Moorhead, G.
Cubas, P., Lauter, N., Doebley, J. and Coen, E. *The TCP domain: a motif found in proteins regulating plant growth and development* 215
Cummins, I., Cole, D.J. and Edwards, R. *A role for glutathione transferases functioning as glutathione peroxidases in resistance to multiple herbicides in black-grass* 285
Czernic, P., Visser, B., Sun, W., Savouré, A., Deslandes, L., Marco, Y., Van Montagu, M. and Verbruggen, N. *Characterization of an* Arabidopsis thaliana *receptor-like protein kinase gene activated by oxidative stress and pathogen attack* 321

d'Aubenton-Carafa, Y. *see* Charrier, B.
Daniel-Vedele, F. *see* Lejay, L.
De Santis-Maciossek, G., Kofer, W., Bock, A., Schoch, S., Maier, R.M., Wanner, G., Rüdiger, W., Koop, H.-U. and Herrmann, R.G. *Targeted disruption of the plastid RNA polymerase genes* rpoA, B *and* C1*: molecular biology, biochemistry and ultrastructure* 477
Dean, C. *see* Marrison, J.L.
Debet, M. *see* Jobling, S.A.
Deiting, U. *see* Moorhead, G.
Deslandes, L. *see* Czernic, P.
Doebley, J. *see* Cubas, P.
Doelling, J.H. *see* Fu, H.
Douglas, C.J. *see* Neustaedter, D.A.
Douglas, P. *see* Moorhead, G.
Duran, J.D. *see* Felix, G.

Edwards, R. *see* Cummins, I.
Ephritikhine, G., Fellner, M., Vannini, C., Lapous, D. and Barbier-Brygoo, H. *The* sax1 *dwarf mutant of* Arabidopsis thaliana *shows altered sensitivity of growth responses to abscisic acid, auxin, gibberellins and ethylene and is partially rescued by exogenous brassinosteroid* 303
Ephritikhine, G., Pagant, S., Fujioka, S., Takasuto, S., Lapous, D., Caboche, M., Kendrick, R.E. and Barbier-Brygoo, H. *The* sax1 *mutation defines a new locus involved in the brassinosteroid biosynthesis pathway in* Arabidopsis thaliana 315
Erickson, F.L., Holzberg, S., Calderon-Urrea, A., Handley, V., Axtell, M., Corr, C. and Baker, B. *The helicase domain of the TMV replicase proteins induces the* N*-mediated defence response in tobacco* 67

Fan, B. *see* Yang, P.
Felix, G. *see* Gómez-Gómez, L.
Felix, G., Duran, J.D., Volko, S. and Boller, T. *Plants have a sensitive perception system for the most conserved domain of bacterial flagellin* 265
Fellner, M. *see* Ephritikhine, G.
Fennema, M. *see* Næsted, H.

© 1999 Blackwell Science Ltd

Figueroa, P., Gómez, I., Holuigue, L., Araya, A. and Jordana, X. *Transfer of* rps14 *from the mitochondrion to the nucleus in maize implied integration within a gene encoding the iron-sulphur subunit of succinate dehydrogenase and expression by alternative splicing* 601
Filleur, S. *see* Lejay, L.
Flavell, R.B. *see* O'Dell, M.
Foster, R. *see* Ishige, F.
Foucher, F. *see* Charrier, B.
Frank, M. *see* Rupp, H.-M.
Frary, A. *see* Hamilton, C.M.
Frasse, P. *see* Zegzouti, H.
Frommer, W.B. *see* Tegeder, M.
Fu, H., Doelling, J.H., Rubin, D.M. and Vierstra, R.D. *Structural and functional analysis of the six regulatory particle triple-A ATPase subunits from the* Arabidopsis *26S proteasome* 529
Fujioka, S. *see* Ephritikhine, G.
Fukui, K. *see* Houben, A.
Furushima-Shimogawara, R. *see* Houben, A.

Gao, M., Kieliszewski, M.J., Lamport, D.T.A. and Showalter, A.M. *Isolation, characterization and immunolocalization of a novel, modular tomato arabinogalactan-protein corresponding to the* LeAGP-1 *gene* 43
Gerbeau, P., Güçlü, J., Ripoche, P. and Maurel, C. *Aquaporin Nt-TIPa can account for the high permeability of tobacco cell vacuolar membrane to small neutral solutes* 577
Gidley, M.J. *see* Jobling, S.A.
Gilmartin, P.M. *see* Willats, W.G.T.
Gissot, L. *see* Bouly, J.-P.
Giuliano, G. *see* Ninu, L.
Glass, A.D.M. *see* Lappartient, A.G.
Gojon, A. *see* Lejay, L.
Gómez, I. *see* Figueroa, P.
Gómez-Gómez, L., Felix, G. and Boller, T. *A single locus determines sensitivity to bacterial flagellin in* Arabidopsis thaliana 277
Gray, J.C. *see* Hatton, D.
Grote, K. *see* Biela, A.
Güçlü, J. *see* Gerbeau, P.

Hall, T.C. *see* Li, G.
Hamilton, C.M., Frary, A., Xu, Y., Tanksley, S.D. and Zhang, H.-B. *Construction of tomato genomic DNA libraries in a binary-BAC (BIBAC) vector* 223
Handley, V. *see* Erickson, F.L.
Hansen, U.-P. *see* Plieth, C.
Hao, L. *see* Næsted, H.
Harthill, J. *see* Moorhead, G.
Hatton, D. and Gray, J.C. *Two MAR DNA-binding proteins of the pea nuclear matrix identify a new class of DNA-binding proteins* 417
Haughn, G.W. *see* Western, T.L.
Hedrich, R. *see* Biela, A.
Herrmann, R.G. *see* De Santis-Maciossek, G.
Higo, K. *see* Kawasaki, T.
Himmelspach, R., Wymer, C.L., Lloyd, C.W. and Nick, P. *Gravity-induced reorientation of cortical microtubules observed* in vivo 449
Hirano, T. *see* Niwa, Y.
Hirochika, H. *see* Takeda, S.
Holuigue, L. *see* Figueroa, P.
Holzberg, S. *see* Erickson, F.L.
Hoth, S. *see* Biela, A.
Houben, A., Wako, T., Furushima-Shimogawara, R., Presting, G., Künzel, G., Schubert, I. and Fukui, K. *The cell cycle dependent phosphorylation of histone H3 is correlated with the condensation of plant mitotic chromosomes* 675
Huang, B.-Q. *see* Chye, M.-L.
Hussey, P.J. *see* Anthony, R.G.

Ichikawa, N. *see* Kawasaki, T.
Ishige, F., Takaichi, M., Foster, R., Chua, N.-H. and Oeda, K. *A G-box motif (GCCACGTGCC) tetramer confers high-level constitutive expression in dicot and monocot plants* 443
Iwabuchi, M. *see* Taoka, K.-i.

Janssen, D.B. *see* Næsted, H.
Jeannette, E., Rona, J.-P., Bardat, F., Cornel, D., Sotta, B. and Miginiac, E. *Induction of RAB18 gene expression and activation of K^+ outward rectifying channels depend on an extracellular perception of ABA in* Arabidopsis thaliana *suspension cells* 13
Jeffcoat, R. *see* Jobling, S.A.
Jiang, L. and Rogers, J.C. *Functional analysis of a Golgi-localized Kex2p-like protease in tobacco suspension culture cells* 23
Jobling, S.A., Schwall, G.P., Westcott, R.J., Sidebottom, C.M., Debet, M., Gidley, M.J., Jeffcoat, R. and Safford, R. *A minor form of starch branching enzyme in potato (*Solanum tuberosum *L.) tubers has a major effect on starch structure: cloning and characterisation of multiple forms of* SBE A 163
Jones, B. *see* Zegzouti, H.
Jordana, X. *see* Figueroa, P.

Kakubari, Y. *see* Nanjo, T.
Kaldenhoff, R. *see* Biela, A.
Kampmann, G. *see* Melzer, S.
Kandasamy, M.K., McKinney, E.C. and Meagher, R.B. *The late pollen-specific actins in angiosperms* 681
Kawasaki, T., Okumura, S., Kishimoto, N., Shimada, H., Higo, K. and Ichikawa, N. *RNA maturation of the rice* SPK *gene may involve* trans-*splicing* 625
Kaya, H. *see* Taoka, K.-i.
Kendrick, R.E. *see* Ephritikhine, G.
Kieliszewski, M.J. *see* Gao, M.
Kishimoto, N. *see* Kawasaki, T.
Knight, H. *see* Plieth, C.
Knight, M.R. *see* Plieth, C.
Knox, J.P. *see* Willats, W.G.T.
Kobayashi, H. *see* Niwa, Y.
Kobayashi, M. *see* Nanjo, T.
Kofer, W. *see* De Santis-Maciossek, G.
Köhler, C., Merkle, T. and Neuhaus, G. *Characterisation of a novel gene family of putative cyclic nucleotide- and calmodulin-regulated ion channels in* Arabidopsis thaliana 97
Kohli, A. *see* Vain, P.
Kondorosi, A. *see* Charrier, B.
Kondorosi, E. *see* Charrier, B.
Koop, H.-U. *see* De Santis-Maciossek, G.
Kouchi, H., Takane, K., So, R.B., Ladha, J.K. and Reddy, P.M. *Rice* ENOD40*: isolation and expression analysis in rice and transgenic soybean root nodules* 121
Kreis, M. *see* Bouly, J.-P.
Künzel, G. *see* Houben, A.
Kutchan, T.M. *see* Unterlinner, B.

Ladha, J.K. *see* Kouchi, H.
Lamport, D.T.A. *see* Gao, M.

Lapous, D. *see* Ephritikhine, G.
Lappartient, A.G., Vidmar, J.J., Leustek, T., Glass, A.D.M. and Touraine, B. *Inter-organ signaling in plants: regulation of ATP sulfurylase and sulfate transporter genes expression in roots mediated by phloem-translocated compound* 89
Latché, A. *see* Zegzouti, H.
Laufs, P., Autran, D. and Traas, J. *A chromosomal paracentric inversion associated with T-DNA integration in* Arabidopsis 131
Lauter, N. *see* Cubas, P.
Lee, I. *see* Aukerman, M.J.
Lee, S.P. *see* Neustaedter, D.A.
Leech, R.M. *see* Marrison, J.L.
Le Gourrierec, J., Li, Y.-F. and Zhou, D.-X. *Transcriptional activation by* Arabidopsis *GT-1 may be through interaction with TFIIA-TBP-TATA complex* 663
Lejay, L., Tillard, P., Lepetit, M., Olive, F.D., Filleur, S., Daniel-Vedele, F. and Gojon, A. *Molecular and functional regulation of two NO_3^- uptake systems by N- and C-status of* Arabidopsis *plants* 509
Lenz, R. *see* Unterlinner, B.
Lepetit, M. *see* Lejay, L.
Lessard, P. *see* Bouly, J.-P.
Leustek, T. *see* Lappartient, A.G.
Li, Y.-F. *see* Le Gourrierec, J.
Li, G. and Hall, T.C. *Footprinting* in vivo *reveals changing profiles of multiple factor interactions with the β-phaseolin promoter during embryogenesis* 633
Lister, C. *see* Marrison, J.L.
Lloyd, C.W. *see* Himmelspach, R.
Lyon, J.M. *see* Simpson, C.G.

Mackintosh, C. *see* Moorhead, G.
Maier, R.M. *see* De Santis-Maciossek, G.
Maitre, B. *see* Zegzouti, H.
Marco, Y. *see* Czernic, P.
Marrison, J.L., Rutherford, S.M., Robertson, E.J., Lister, C., Dean, C. and Leech, R.M. *The distinctive roles of five different* ARC *genes in the chloroplast division process in* Arabidopsis 651
Martínez-García, J.F. and Quail, P.H. *The HMG-I/Y protein PF1 stimulates binding of the transcriptional activator GT-2 to the* PHYA *gene promoter* 173
Marty, C. *see* Zegzouti, H.
Matsuoka, M. *see* Nishimura, A.
Maurel, C. *see* Gerbeau, P.
McKinney, E.C. *see* Kandasamy, M.K.
McQuade, C. *see* Simpson, C.G.
Meagher, R.B. *see* Kandasamy, M.K.
Meek, S. *see* Moorhead, G.
Melzer, S., Kampmann, G., Chandler, J. and Apel, K. FPF1 *modulates the competence to flowering in* Arabidopsis 395
Merkle, T. *see* Köhler, C.
Meshi, T. *see* Taoka, K.-i.
Metzlaff, M. *see* O'Dell, M.
Miarelli, C. *see* Ninu, L.
Miginiac, E. *see* Jeannette, E.
Mikkelsen, J.D. *see* Willats, W.G.T.
Moorhead, G, Douglas, P., Cotelle, V., Harthill, J., Morrice, N., Meek, S., Deiting, U., Stitt, M., Scarabel, M., Aitken, A. and Mackintosh, C. *Phosphorylation-dependent interactions between enzymes of plant metabolism and 14-3-3 proteins* 1
Morrice, N. *see* Moorhead, G.
Mundy, J. *see* Næsted, H.
Murakami, H. *see* Nakagami, H.

Næsted, H., Fennema, M., Hao, L., Andersen, M., Janssen, D.B. and Mundy, J. *A bacterial haloalkane dehalogenase gene as a negative selectable marker in* Arabidopsis 571
Nagatani, A. *see* Cerdán, P.D.
Nakahira, Y., *see* Toyoshima, J.
Nakagami, H., Sekine, M., Murakami, H. and Shinmyo, A. *Tobacco retinoblastoma-related protein phosphorylated by a distinct cyclin-dependent kinase complex with Cdc2/cyclin D in* vitro 243
Nakayama, T. *see* Taoka, K.-i.
Nanjo, T., Kobayashi, M., Yoshiba, Y., Sanada, Y., Wada, K., Tsukaya, H., Kakubari, Y., Yamaguchi-Shinozaki, K. and Shinozaki, K. *Biological functions of proline in morphogenesis and osmotolerance revealed in antisense transgenic* Arabidopsis thaliana 185
Neuhaus, G. *see* Köhler, C.
Neustaedter, D.A., Lee, S.P. and Douglas, C.J. *A novel parsley* 4CL1 cis*-element is required for developmentally regulated expression and protein-DNA complex formation* 77
Nick, P. *see* Himmelspach, R.
Ninu, L., Ahmad, M., Miarelli, C., Cashmore, A.R. and Giuliano, G. *Cryptochrome 1 controls tomato development in response to blue light* 551
Nishimura, A., Tamaoki, M., Sato, Y. and Matsuoka, M. *The expression of tobacco* knotted1*-type class1 homeobox genes correspond to regions predicted by the cytohistological zonation model* 337
Niwa, Y., Hirano, T., Yoshimoto, K., Shimizu, M. and Kobayashi, H. *Non-invasive quantitative detection and applications of non-toxic, S65T-type green fluorescent protein in living plants* 455

O'Dell, M., Metzlaff, M. and Flavell, R.B. *Post-transcriptional gene silencing of chalcone synthase in transgenic petunias, cytosine methylation and epigenetic variation* 33
Oeda, K. *see* Ishige, F.
Offler, C.E. *see* Tegeder, M.
Ohlrogge, J.B. *see* Savage, L.J.
Okumura, S. *see* Kawasaki, T.
Olive, F.D. *see* Lejay, L.
Oliver, M.J. *see* Wood, A.J.
Otsuki, H. *see* Takeda, S.
Otto, B. *see* Biela, A.

Pagant, S. *see* Ephritikhine, G.
Patrick, J.W. *see* Tegeder, M.
Pech, J.-C. *see* Zegzouti, H.
Plieth, C., Hansen, U.-P., Knight, H. and Knight, M.R. *Temperature sensing by plants: the primary characteristics of signal perception and calcium response* 491
Plieth, C., Sattelmacher, B., Hansen, U.-P. and Knight, M.R. *Low pH-mediated elevations in cytosolic calcium are inhibited by aluminium: a potential mechanism for aluminium toxicity* 643
Presting, G. *see* Houben, A.
Pysh, L.D., Wysocka-Diller, J.W., Camilleri, C., Bouchez, D. and Benfey, P.N. *The GRAS gene family in Arabidopsis: sequence characterization and basic expression analysis of the* SCARECROW-LIKE *genes* 111

Quail, P.H. *see* Martínez-García, J.F.

Ratet, P. *see* Charrier, B.
Reddy, P.M. *see* Kouchi, H.
Reymundo, F.C. *see* Cerdán, P.D.
Ripoche, P. *see* Gerbeau, P.
Robertson, E.J. *see* Marrison, J.L.
Rogers, J.C. *see* Jiang, L.
Rona, J.-P. *see* Jeannette, E.
Rubin, D.M. *see* Fu, H.
Rüdiger, W. *see* De Santis-Maciossek, G.
Rupp, H.-M., Frank, M., Werner, T., Strnad, M. and Schmülling, T. *Increased steady state mRNA levels of the* STM *and* KNAT1 *homeobox genes in cytokinin overproducing* Arabidopsis thaliana *indicate a role for cytokinins in the shoot apical meristem* 557
Rutherford, S.M. *see* Marrison, J.L.

Safford, R. *see* Jobling, S.A.
Sanada, Y. *see* Nanjo, T.
Sato, Y. *see* Nishimura, A.
Satoh, J., *see* Toyoshima, J.
Sattelmacher, B. *see* Plieth, C.
Savage, L.J. and Ohlrogge, J.B. *Phosphorylation of pea chloroplast acetyl-CoA carboxylase* 521
Savouré, A. *see* Czernic, P.
Scarabel, M. *see* Moorhead, G.
Schmülling, T. *see* Rupp, H.-M.
Schoch, S. *see* De Santis-Maciossek, G.
Schubert, I. *see* Houben, A.
Schwall, G.P. *see* Jobling, S.A.
Sekine, M. *see* Nakagami, H.
Shiina, T., *see* Toyoshima, J.
Shimada, H. *see* Kawasaki, T.
Shimizu, M. *see* Niwa, Y.
Shinmyo, A. *see* Nakagami, H.
Shinozaki, K. *see* Nanjo, T.
Shinshi, H. *see* Yano, A.
Showalter, A.M. *see* Gao, M.
Sidebottom, C.M. *see* Jobling, S.A.
Simpson, C.G., Clark, G.P., Lyon, J.M., Watters, J., McQuade, C. and Brown, J.W.S. *Interactions between introns via exon definition in plant pre-mRNA splicing* 293
Snape, J.W. *see* Vain, P.
So, R.B. *see* Kouchi, H.
Sotta, B. *see* Jeannette, E.
Spiker, S. *see* Ülker, B.
Staneloni, R.J. *see* Cerdán, P.D.
Stitt, M. *see* Moorhead, G.
Strnad, M. *see* Rupp, H.-M.
Sugimoto, K. *see* Takeda, S.
Sun, W. *see* Czernic, P.
Suzuki, K. *see* Yano, A.

Takane, K. *see* Kouchi, H.
Takaichi, M. *see* Ishige, F.
Takatsuto, S. *see* Ephritikhine, G.
Takeda, S., Sugimoto, K., Otsuki, H. and Hirochika, H. *A 13-bp* cis*-regulatory element in the LTR promoter of the tobacco retrotransposon* Tto1 *is involved in responsiveness to tissue culture, wounding, methyl jasmonate and fungal elicitors* 383
Tamaoki, M. *see* Nishimura, A.
Tanksley, S.D. *see* Hamilton, C.M.
Taoka, K.-i., Kaya, H., Nakayama, T., Araki, T., Meshi, T. and Iwabuchi, M. *Identification of three kinds of mutually related composite elements conferring S phase-specific transcriptional activation* 611
Tegeder, M., Wang, X.-D., Frommer, W.B., Offler, C.E. and Patrick, J.W. *Sucrose transport into developing seeds of* Pisum sativum *L.* 151
Thermes, C. *see* Charrier, B.
Thomas, M. *see* Bouly, J.-P.
Thompson, W.F. *see* Ülker, B.
Thompson, W.F. *see* Vain, P.
Tillard, P. *see* Lejay, L.
Touraine, B. *see* Lappartient, A.G.
Toyoshima, J., Satoh, J., Baba, K., Nakahira, Y., Tsunoyama, Y., Shiina, T. and Toyoshima , Y. *Developmental stage-specific multi-subunit plastid RNA polymerases (PEP) in wheat* 407
Toyoshima ,Y. *see* Toyoshima, J.
Traas, J. *see* Laufs, P.
Tsukaya, H. *see* Nanjo, T.
Tsunoyama, Y., *see* Toyoshima, J.

Ülker, B., Allen, G.C., Thompson, W.F., Spiker, S. and Weissinger, A.K. *A tobacco matrix attachment region reduces the loss of transgene expression in the progeny of transgenic tobacco plants* 253
Unterlinner, B., Lenz, R. and Kutchan, T.M. *Molecular cloning and functional expression of codeinone reductase: the penultimate enzyme in morphine biosynthesis in the opium poppy* Papaver somniferum 465

Vain, P., Worland, B., Kohli, A., Snape, J.W., Christou, P., Allen, G.C. and Thompson, W.F. *Matrix attachment regions increase transgene expression levels and stability in transgenic rice plants and their progeny* 233
Van Montagu, M. *see* Czernic, P.
Vannini, C. *see* Ephritikhine, G.
Verbruggen, N. *see* Czernic, P.
Vidmar, J.J. *see* Lappartient, A.G.
Vierstra, R.D. *see* Fu, H.
Visser, B. *see* Czernic, P.
Volko, S. *see* Felix, G.

Wada, K. *see* Nanjo, T.
Wako, T. *see* Houben, A.
Wang, X.-D. *see* Tegeder, M.
Wang, Z. *see* Yang, P.
Wanner, G. *see* De Santis-Maciossek, G.
Watters, J. *see* Simpson, C.G.
Weigel, D. *see* Aukerman, M.J.
Weissinger, A.K. *see* Ülker, B.
Werner, T. *see* Rupp, H.-M.
Westcott, R.J. *see* Jobling, S.A.
Western, T.L. and Haughn, G.W. BELL1 *and* AGAMOUS *genes promote ovule identity in* Arabidopsis thaliana 329
Whitelam, G.C. *see* Cerdán, P.D.
Willats, W.G.T., Gilmartin, P.M., Mikkelsen, J.D. and Knox, J.P. *Cell wall antibodies without immunization: generation and use of de-esterified homogalacturonan block-specific antibodies from a naive phage display library* 57
Wille, P.A., Aeschbacher, R.A. and Boller, T. *Distribution of fungal endophyte genotypes in doubly infected host grasses* 349
Wood, A.J. and Oliver, M.J. *Translational control in plant stress: the formation of messenger ribonucleoprotein particles (mRNPs) in response to desiccation of* Tortula ruralis *gametophytes* 359
Worland, B. *see* Vain, P.

Wymer, C.L. *see* Himmelspach, R.
Wysocka-Diller, J.W. *see* Pysh, L.D.

Xu, Y. *see* Hamilton, C.M.

Yamaguchi-Shinozaki, K. *see* Nanjo, T.
Yang, P., Chen, C., Wang, Z., Fan, B. and Chen, Z. *A pathogen- and salicylic acid-induced WRKY DNA-binding activity recognizes the elicitor response element of the tobacco class I chitinase gene promoter* 141
Yano, A., Suzuki, K. and Shinshi, H. *A signaling pathway, independent of the oxidative burst, that leads to hypersensitive cell death in cultured tobacco cells includes a serine protease* 105
Yanovsky, M.J. *see* Cerdán, P.D.
Yoshiba, Y. *see* Nanjo, T.
Yoshimoto, K. *see* Niwa, Y.

Zee, S.Y. *see* Chye, M.-L.
Zegzouti, H., Jones, B., Frasse, P., Marty, C., Maitre, B., Latché, A., Pech, J.-C. and Bouzayen, M. *Ethylene-regulated gene expression in tomato fruit: characterization of novel ethylene-responsive and ripening-related genes isolated by differential display* 589
Zhang, H.-B. *see* Hamilton, C.M.
Zhou, D.-X. *see* Le Gourrierec, J.

The Plant Journal (1999) **18**(6), 699–701

Subject index

AAA superfamily 529
ABA reception 13
abscisic acid 303, 315
acetyl-CoA carboxylase 521
actin cytoskeleton 681
aequorin 491
aequotin 643
affinity chromatography 1
AGAMOUS 329
aleurain 23
Alopecurus myosuroides 285
alternative splicing 293, 601
aluminium toxicity 643
AMPK 541
amylose 163
angiosperm 681
antisense 185
antisense RNA 551
AP1 395
APETALA2 329
aquaporin 565, 577
Arabidopsis 329, 395, 499, 541, 651
Arabidopsis-mutant 303, 315
Arabidopsis thaliana 89, 97, 131, 455, 509, 529, 557
Arabidopsis thaliana suspension cells 13
arabinogalactan-protein 43
arc double mutants 651
ARC genes 651
arc single mutants 651
ATP sulfurylase 89
ATPase 529
auxin 303, 315

BAC vector 223
BELL1 329
bHLH domain 215
BIBAC 223
binary vector 223
bioremediation 571
blue light photoreceptor 551
Brassica napus 89
brassinosteroid biosynthesis 315
brassinosteroids 303
bryophyte 359

calcium-dependent protein kinase (CDPK) 1
callose 277
calmodulin 97
carboxyltransferase subunit 521
Cdc2 243
cell cycle 243
cell wall 43, 57, 371
cell wall proteins 185
centromere 675
chalcone synthase 33
chimeric promoter 443
chitinase 141
chloroplast 521
chloroplast division 651
chromosomal rearrangement 131
chromosome condensation 675

CoA ligase 77
codeine 465
codeinone 465
codeinone reductase 465
coexistence 349
cold-shock 491
competitive exclusion 349
cooling rate 491
cotyledon 151
4-coumarate 77
cross talk 97
C-status 509
cyclic nucleotide-gated channels 97
cyclic nucleotides 97
cyclinD 243
cycloidea 215
cytokinin 557
cytoplasmic calcium 491, 643
cytoplasmic tail 23

de-etiolation 499
defence response 265
defence 277
desiccation 359
development 329, 407
1,2-dibromoethane 571
differential display 589
dinitroaniline and phosphorothioamidate herbicides 669
DNA-bending 173
DNA-binding 173
double infections 349

early nodulin genes 121
elicitor 265, 383
embryo 205
embryogenesis 633
Epichloë bromicola 349
ethylene 265, 303, 315, 589
evolution 681
evolutionary gene transfer 601
EXGT 371
exon definition 293
exon skipping 293
expression 121
EXT 371
extended –10 promoter 407

fatty acid synthesis 521
fhy1 499
floral transition 195
flowering time genes 395
FPF1 395
fungal endophytes 349

G-box motif 443
gene disruption 477
gene expression 541
gene family 111
gene silencing 33, 253
genome organisation 431
genomic 223

© 1999 Blackwell Science Ltd

gibberellins 111, 303, 315
glutathione 89
glutathione transferases 285
gravitropism 449
green fluorescent protein 455
GT-1 663
GT-2 173
gymnosperms 681

helicase 67
herbicide resistance 285
high-level constitutive expression 443
high-molecular-weight 223
histone gene promoter 611
HMG-I/Y 173
homeobox 337
homogalacturonan 57
hydroxyproline-rich 43
hypersensitive cell death 105
hypersensitive responses 141
hypocotyl elongation 551

integral membrane protein 23
inter-organ signaling 89
inversion 131
ipt gene 557
iron-sulphur subunit 601
isolation 121

jasmonate 383

K^+ channels 97
K^+ outward rectifying currents 13
KKD/E repeat 417

late flowering 195
LEAFY 195
legume 431
LFY 395
Lhcb 499
library 223
lipid metabolism 205
lipid transfer 205
LUMINIDEPENDENS 195
Lycopersicon esculentum 589

maize 449
mapping 277
MAR/SAR DNA-binding protein 417
matrix attachment regions 233, 253
membrane permeability 577
mercury sensitivity of plant aquaporins 565
Meri-5 371
meristem 337
methylation 33
microinjection 449
microprojectile bombardment 253
microtubule dynamics 449
microtubule reorientation 449
microtubules 669
monoclonal antibody 57, 681
morphine 465
morphogenesis 185

mRNPs 359
MYB proteins 77

N gene 67
nitrate transporters 509
nitrate uptake 509
non-tissue specificity 443
N-status 509
nuclear localization 195
nuclear scaffold/matrix 417
nucleolus 417

ObENOD40 121
Oct-containing composite element 611
opium poppy 465
organelle biogenesis 455
Oryza sativa 233
OsENOD40 121
osmotolerance 185
ovule 329
oxidative burst 105, 265, 277
oxidative stress 285

P5CS 185
Papaver somniferum 465
particle bombardment 233
pathogen 265
PCF 215
pea 417
pectic polysaccharide 57
petunia 33
PF1 173
phage display 57
phaseolin promoter 633
phenotype 477
phenylalanine ammonia-lyase 77
phenylpropanoid metabolism 77
phosphorylated histone H3 675
phosphorylation 243
photomorphogenesis 551
phototropism 551
PHYA 173
phytochrome A 499
phytochrome B 499
Pisum sativum 151
plant development 215
plant disease resistance 67
plant homeobox genes 557
plant intron splicing 293
plant mitochondria 601
plant mitotic chromosomes 675
plant-pathogen interaction 321
plasma membrane 43, 205, 577
plastid 407, 477
plastome transformation 477
pollen 681
potato 163
PR gene expression 277
proline 185
26S proteasome 529
protein phosphorylation 141, 521
14-3-3 proteins 1
proteolytic processing 23
psbA 407

P-type H⁺-ATPase 151

quantitative marker 455

R gene 277
RAB18 13
radial patterning 111
Ralstonia solanacearum 321
recombination 571
regulatory evolution 383
regulatory genes 589
19S regulatory particle 529
reporter protein 23
retinoblastoma 243
retrotransposon 383
ribosome biogenesis 417
rice 121, 625
ripening 589
RNA polymerase 407
RNA polymerase genes 477
root 111
RT-PCR 589
RY element binding 633

S phase-specific expression 611
S14 ribosomal protein 601
S65T mutation 455
salicylic acid 141, 321
scaffold attachment regions 253
seed 205, 625
seed coat 151
selectivity of plant aquaporins 565
serine protease 105
shoot apex 195
silique 205
SIP 541
SNF1 541
SNF4 541
solute 577
spatial regulation 633
SPK 625
splicing efficiency 293
starch branching enzyme 163
strong enhancer 443
substrate specificity 23
succinate dehydrogenase 601
sucrose import 151
sucrose-phosphate synthase 1
sugar induction 509
sulfate transport 89

TBP 663
TCH4 371
TCP gene family 215
T-DNA 131
temperature sensing 491
temporal regulation 633
teosinte branched1 215
TFIIA 663
tissue culture 383
TMV 67
tobacco 67, 77, 105, 243, 253, 337, 565
tobacco mosaic virus 141
tomato 43
tonoplast 577

transcription 77
transcription factor 111, 663
transcriptional activation 633
transcriptional regulation 611
transfer cells 151
transgene expression stability 233
transgene stability 253
transgenic maize 669
transgenic plants 455, 551, 557
translational gene control 359
transposable elements 431
transposition 571
trans-splicing 625
trehalose-phosphate synthase 1
trihelix DNA-binding domain 663
tuber 163
tubulin 669
tunica-corpus 337

UA-richness 293
ubiquitin 529

water transport 577
weeds 285
wheat 407
wounding 383
WRKY DNA-binding activity 141

XTR 371

zonation model 337

THE plant JOURNAL

VOLUME 18

Editors

Dianna Bowles

Jeff Dangl

Jean Dénarié

Liz Dennis

Jérôme Giraudat

Harry Klee

Maarten Koornneef

Cathie Martin

Maurice Moloney

Julian Schroeder

Mark Stitt

Published by Blackwell Science Ltd,
in association with the Society for Experimental Biology

© 1999 Blackwell Science Ltd and the Society for Experimental Biology. Authorization to photocopy for internal or personal use or the internal or personal use of specific clients is granted by Blackwell Science Ltd and the Society for Experimental Biology for libraries and other users registered with the Copyright Clearance Centre (CCC) Transactional Reporting Service, provided that the base fee of $14.00 per copy is paid directly to the CCC, 222 Rosewood Drive, Suite 910, Danvers, MA 01923, USA. This consent does not extend to other kinds of copying, such as copying for general distribution for advertising or promotional purposes, for creating new collective works or for resale. Special requests should be addressed to the Chief Editor.
0960-7412/99 $14.00.

Published by Blackwell Science Ltd, in association with the Society for Experimental Biology

Blackwell Science Ltd

Osney Mead, Oxford OX2 0EL, UK
25 John Street, London WC1N 2BL, UK
23 Ainslie Place, Edinburgh EH3 6AJ, UK

Blackwell Science Inc., Commerce Place, 350 Main Street, Malden, MA 02148-5018, USA
Blackwell Science Asia, 54 University Street, Carlton South, Victoria 3053, Australia
Blackwell Wissenschafts-Verlag GmbH, Kurfürstendamm 57, 10707 Berlin, Germany
Blackwell Science KK, MG-Kodenmacho Building, 7–10 Kodenmacho Nihombashi, Cho-ku, Tokyo 103-0001, Japan
Blackwell Science Ltd, 10 rue Casimir Delavigne, 75006 Paris, France

ISSN 0960-7412

Typeset and printed by Information Press Ltd, Oxford, UK.

Contents

Number 1 April 1999

1 **Phosphorylation-dependent interactions between enzymes of plant metabolism and 14-3-3 proteins.** *G. Moorhead, P. Douglas, V. Cotelle, J. Harthill, N. Morrice, S. Meek, U. Deiting, M. Stitt, M. Scarabel, A. Aitken and C. MacKintosh*

13 **Induction of RAB18 gene expression and activation of K^+ outward rectifying channels depend on an extracellular perception of ABA in *Arabidopsis thaliana* suspension cells.** *E. Jeannette, J.-P. Rona, F. Bardat, D. Cornel, B. Sotta and E. Miginiac*

23 **Functional analysis of a Golgi-localized Kex2p-like protease in tobacco suspension culture cells.** *L. Jiang and J.C. Rogers*

33 **Post-transcriptional gene silencing of chalcone synthase in transgenic petunias, cytosine methylation and epigenetic variation.** *M. O'Dell, M. Metzlaff and R.B. Flavell*

43 **Isolation, characterization and immunolocalization of a novel, modular tomato arabinogalactan-protein corresponding to the *LeAGP-1* gene.** *M. Gao, M.J. Kieliszewski, D.T.A. Lamport and A.M. Showalter*

57 **Cell wall antibodies without immunization: generation and use of de-esterified homogalacturonan block-specific antibodies from a naive phage display library.** *W.G.T. Willats, P.M. Gilmartin, J.D. Mikkelsen and J.P. Knox*

67 **The helicase domain of the TMV replicase proteins induces the *N*-mediated defence response in tobacco.** *F.L. Erickson, S. Holzberg, A. Calderon-Urrea, V. Handley, M. Axtell, C. Corr and B. Baker*

77 **A novel parsley *4CL1 cis*-element is required for developmentally regulated expression and protein-DNA complex formation.** *D.A. Neustaedter, S.P. Lee and C.J. Douglas*

89 SHORT COMMUNICATION
Inter-organ signaling in plants: regulation of ATP sulfurylase and sulfate transporter genes expression in roots mediated by phloem-translocated compound. *A.G. Lappartient, J.J. Vidmar, T. Leustek, A.D.M. Glass and B. Touraine*

97 SHORT COMMUNICATION
Characterisation of a novel gene family of putative cyclic nucleotide- and calmodulin-regulated ion channels in *Arabidopsis thaliana*. *C. Köhler, T. Merkle and G. Neuhaus*

105 SHORT COMMUNICATION
A signaling pathway, independent of the oxidative burst, that leads to hypersensitive cell death in cultured tobacco cells includes a serine protease. *A. Yano, K. Suzuki and H. Shinshi*

111 SHORT COMMUNICATION
The GRAS gene family in Arabidopsis: sequence characterization and basic expression analysis of the *SCARECROW-LIKE* genes. *L.D. Pysh, J.W. Wysocka-Diller, C. Camilleri, D. Bouchez and P.N. Benfey*

Number 2 April 1999

121 **Rice *ENOD40*: isolation and expression analysis in rice and transgenic soybean root nodules.** *H. Kouchi, K. Takane, R.B. So, J.K. Ladha and P.M. Reddy*

131 **A chromosomal paracentric inversion associated with T-DNA integration in *Arabidopsis*.** *P. Laufs, D. Autran and J. Traas*

141 **A pathogen- and salicylic acid-induced WRKY DNA-binding activity recognizes the elicitor response element of the tobacco class I chitinase gene promoter.** *P. Yang, C. Chen, Z. Wang, B. Fan and Z. Chen*

151 **Sucrose transport into developing seeds of *Pisum sativum* L.** *M. Tegeder, X.-D. Wang, W.B. Frommer, C.E. Offler and J.W. Patrick*

163 **A minor form of starch branching enzyme in potato (*Solanum tuberosum* L.) tubers has a major effect on starch structure: cloning and characterisation of multiple forms of SBE A.** *S.A. Jobling, G.P. Schwall, R.J. Westcott, C.M. Sidebottom, M. Debet, M.J. Gidley, R. Jeffcoat and R. Safford*

173 **The HMG-I/Y protein PF1 stimulates binding of the transcriptional activator GT-2 to the *PHYA* gene promoter.** *J.F. Martínez-García and P.H. Quail*

185 **Biological functions of proline in morphogenesis and osmotolerance revealed in antisense transgenic *Arabidopsis thaliana*.** *T. Nanjo, M. Kobayashi, Y. Yoshiba, Y. Sanada, K. Wada, H. Tsukaya, Y. Kakubari, K. Yamaguchi-Shinozaki and K. Shinozaki*

195 **The Arabidopsis flowering-time gene *LUMINIDEPENDENS* is expressed primarily in regions of cell proliferation and encodes a nuclear protein that regulates *LEAFY* expression.** *M.J. Aukerman, I. Lee, D. Weigel and R.M. Amasino*

205 **Isolation of a gene encoding *Arabidopsis* membrane-associated acyl-CoA binding protein and immunolocalization of its gene product.** *M.-L. Chye, B.-Q. Huang and S.Y. Zee*

215 SHORT COMMUNICATION
The TCP domain: a motif found in proteins regulating plant growth and development. *P. Cubas, N. Lauter, J. Doebley and E. Coen*

223 TECHNICAL ADVANCE
Construction of tomato genomic DNA libraries in a binary-BAC (BIBAC) vector. *C.M. Hamilton, A. Frary, Y. Xu, S.D. Tanksley and H.-B. Zhang*

231 **Erratum concerning Volume 17, Number 4, February 1999, pages 385-395, Veena *et al.***

Number 3 May 1999

233 **Matrix attachment regions increase transgene expression levels and stability in transgenic rice plants and their progeny.** *P. Vain, B. Worland, A. Kohli, J.W. Snape, P. Christou, G.C. Allen and W.F. Thompson*

243 **Tobacco retinoblastoma-related protein phosphorylated by a distinct cyclin-dependent kinase complex with Cdc2/cyclin D *in vitro*.** *H. Nakagami, M. Sekine, H. Murakami and A. Shinmyo*

253 **A tobacco matrix attachment region reduces the loss of transgene expression in the progeny of transgenic tobacco plants.** *B. Ülker, G.C. Allen, W.F. Thompson, S. Spiker and A.K. Weissinger*

265 **Plants have a sensitive perception system for the most conserved domain of bacterial flagellin.** *G. Felix, J.D. Duran, S. Volko and T. Boller*

277 **A single locus determines sensitivity to bacterial flagellin in *Arabidopsis thaliana*.** *L. Gómez-Gómez, G. Felix and T. Boller*

285 **A role for glutathione transferases functioning as glutathione peroxidases in resistance to multiple herbicides in black-grass.** *I. Cummins, D.J. Cole and R. Edwards*

293 **Interactions between introns via exon definition in plant pre-mRNA splicing.** *C.G. Simpson, G.P. Clark, J.M. Lyon, J. Watters, C. McQuade and J.W.S. Brown*

303 **The *sax1* dwarf mutant of *Arabidopsis thaliana* shows altered sensitivity of growth responses to abscisic acid, auxin, gibberellins and ethylene and is partially rescued by exogenous brassinosteroid.** *G. Ephritikhine, M. Fellner, C. Vannini, D. Lapous and H. Barbier-Brygoo*

315 SHORT COMMUNICATION
The *sax1* mutation defines a new locus involved in the brassinosteroid biosynthesis pathway in *Arabidopsis thaliana*. *G. Ephritikhine, S. Pagant, S. Fujioka, S. Takatsuto, D. Lapous, M. Caboche, R.E. Kendrick and H. Barbier-Brygoo*

321 SHORT COMMUNICATION
Characterization of an *Arabidopsis thaliana* receptor-like protein kinase gene activated by oxidative stress and pathogen attack. *P. Czernic, B. Visser, W. Sun, A. Savouré, L. Deslandes, Y. Marco, M. Van Montagu and N. Verbruggen*

329 SHORT COMMUNICATION
***BELL1* and *AGAMOUS* genes promote ovule identity in *Arabidopsis thaliana*.** *T.L. Western and G.W. Haughn*

Number 4 May 1999

337 **The expression of tobacco *knotted1*-type class 1 homeobox genes correspond to regions predicted by the cytohistological zonation model.** *A. Nishimura, M. Tamaoki, Y. Sato and M. Matsuoka*

349 **Distribution of fungal endophyte genotypes in doubly infected host grasses.** *P.A. Wille, R.A. Aeschbacher and T. Boller*

359 **Translational control in plant stress: the formation of messenger ribonucleoprotein particles (mRNPs) in response to desiccation of *Tortula ruralis* gametophytes.** *A.J. Wood and M.J. Oliver*

371 ***In vitro* activities of four xyloglucan endotransglycosylases from *Arabidopsis*.** *P. Campbell and J. Braam*

383 **A 13-bp *cis*-regulatory element in the LTR promoter of the tobacco retrotransposon *Tto1* is involved in responsiveness to tissue culture, wounding, methyl jasmonate and fungal elicitors.** *S. Takeda, K. Sugimoto, H. Otsuki and H. Hirochika*

395 ***FPF1* modulates the competence to flowering in *Arabidopsis*.** *S. Melzer, G. Kampmann, J. Chandler and K. Apel*

407 **Developmental stage-specific multi-subunit plastid RNA polymerases (PEP) in wheat.** *Y. Toyoshima J. Satoh, K. Baba, Y. Nakahira, Y. Tsunoyama, T. Shiina and Y. Toyoshima*

417 **Two MAR DNA-binding proteins of the pea nuclear matrix identify a new class of DNA-binding proteins.** *D. Hatton and J.C. Gray*

431 ***Bigfoot:* a new family of MITE elements characterized from the *Medicago* genus.** *B. Charrier, F. Foucher, E. Kondorosi, Y. d'Aubenton-Carafa, C. Thermes, A. Kondorosi and P. Ratet*

443 SHORT COMMUNICATION
A G-box motif (GCCACGTGCC) tetramer confers high-level constitutive expression in dicot and monocot plants. *F. Ishige, M. Takaichi, R. Foster, N.-H. Chua and K. Oeda*

449 SHORT COMMUNICATION
Gravity-induced reorientation of cortical microtubules observed *in vivo*. *R. Himmelspach, C. L. Wymer, C. W. Lloyd and P. Nick*

455 TECHNICAL ADVANCE
Non-invasive quantitative detection and applications of non-toxic, S65T-type green fluorescent protein in living plants. *Y. Niwa, T. Hirano, K. Yoshimoto, M. Shimizu and H. Kobayashi*

Number 5 June 1999

465 **Molecular cloning and functional expression of codeinone reductase: the penultimate enzyme in morphine biosynthesis in the opium poppy *Papaver somniferum*.** *B. Unterlinner, R. Lenz and T.M. Kutchan*

477 **Targeted disruption of the plastid RNA polymerase genes *rpoA, B* and *C1*: molecular biology, biochemistry and ultrastructure.** *G. De Santis-Maciossek, W. Kofer, A. Bock, S. Schoch, R.M. Maier, G. Wanner, W. Rüdiger, H.-U. Koop and R.G. Herrmann*

491 **Temperature sensing by plants: the primary characteristics of signal perception and calcium response.** *C. Plieth, U.-P. Hansen, H. Knight and M.R. Knight*

499 **Regulation of phytochrome B signaling by phytochrome A and FHY1 in *Arabidopsis thaliana*.** *P.D. Cerdán, M.J. Yanovsky, F.C. Reymundo, A. Nagatani, R.J. Staneloni, G.C. Whitelam and J.J. Casal*

509 **Molecular and functional regulation of two NO_3^- uptake systems by N- and C-status of *Arabidopsis* plants.** *L. Lejay, P. Tillard, M. Lepetit, F.D. Olive, S. Filleur, F. Daniel-Vedele and A. Gojon*

521 **Phosphorylation of pea chloroplast acetyl-CoA carboxylase.** *L.J. Savage and J.B. Ohlrogge*

529 **Structural and functional analysis of the six regulatory particle triple-A ATPase subunits from the *Arabidopsis* 26S proteasome.** *H. Fu, J.H. Doelling, D.M. Rubin and R.D. Vierstra*

541 ***Arabidopsis thaliana* proteins related to the yeast SIP and SNF4 interact with AKINα1, an SNF1-like protein kinase.** *J.-P. Bouly, L. Gissot, P. Lessard, M. Kreis and M. Thomas*

551 SHORT COMMUNICATION
Cryptochrome 1 controls tomato development in response to blue light. *L. Ninu, M. Ahmad, C. Miarelli, A.R. Cashmore and G. Giuliano*

557 SHORT COMMUNICATION
Increased steady state mRNA levels of the *STM* and *KNAT1* homeobox genes in cytokinin overproducing *Arabidopsis thaliana* indicate a role for cytokinins in the shoot apical meristem. *H.-M. Rupp, M. Frank, T. Werner, M. Strnad and T. Schmülling*

565 SHORT COMMUNICATION
The *Nicotiana tabacum* plasma membrane aquaporin NtAQP1 is mercury-insensitive and permeable for glycerol. *A. Biela, K. Grote, B. Otto, S. Hoth, R. Hedrich and R. Kaldenhoff*

571 TECHNICAL ADVANCE
A bacterial haloalkane dehalogenase gene as a negative selectable marker in *Arabidopsis*. *H. Næsted, M. Fennema, L. Hao, M. Andersen, D.B. Janssen and J. Mundy*

Number 6 June 1999

577 **Aquaporin Nt-TIPa can account for the high permeability of tobacco cell vacuolar membrane to small neutral solutes.** *P. Gerbeau, J. Güçlü, P. Ripoche and C. Maurel*

589 **Ethylene-regulated gene expression in tomato fruit: characterization of novel ethylene-responsive and ripening-related genes isolated by differential display.** *H. Zegzouti, B. Jones, P. Frasse, C. Marty, B. Maitre, A. Latché, J.-C. Pech and M. Bouzayen*

601 **Transfer of *rps14* from the mitochondrion to the nucleus in maize implied integration within a gene encoding the iron-sulphur subunit of succinate dehydrogenase and expression by alternative splicing.** *P. Figueroa, I. Gómez, L. Holuigue, A. Araya and X. Jordana*

611 **Identification of three kinds of mutually related composite elements conferring S phase-specific transcriptional activation.** *K.-i. Taoka, H. Kaya, T. Nakayama, T. Araki, T. Meshi and M. Iwabuchi*

625 **RNA maturation of the rice *SPK* gene may involve *trans*-splicing.** *T. Kawasaki, S. Okumura, N. Kishimoto, H. Shimada, K. Higo and N. Ichikawa*

633 **Footprinting *in vivo* reveals changing profiles of multiple factor interactions with the β-phaseolin promoter during embryogenesis.** *G. Li and T.C. Hall*

643 **Low pH-mediated elevations in cytosolic calcium are inhibited by aluminium: a potential mechanism for aluminium toxicity.** *C. Plieth, B. Sattelmacher, U.-P. Hansen and M.R. Knight*

651 **The distinctive roles of five different *ARC* genes in the chloroplast division process in *Arabidopsis*.** *J.L. Marrison, S.M. Rutherford, E.J. Robertson, C. Lister, C. Dean and R.M. Leech*

663 SHORT COMMUNICATION
Transcriptional activation by *Arabidopsis* GT-1 may be through interaction with TFIIA-TBP-TATA complex. *J. Le Gourrierec, Y.-F. Li and D.-X. Zhou*

669 SHORT COMMUNICATION
Double mutation in *Eleusine indica* α-tubulin increases the resistance of transgenic maize calli to dinitroaniline and phosphorothioamidate herbicides. *R.G. Anthony and P.J. Hussey*

675 SHORT COMMUNICATION
The cell cycle dependent phosphorylation of histone H3 is correlated with the condensation of plant mitotic chromosomes. *A. Houben, T. Wako, R. Furushima-Shimogawara, G. Presting, G. Künzel, I. Schubert and K. Fukui*

681 TECHNICAL ADVANCE
The late pollen-specific actins in angiosperms. *M.K. Kandasamy, E.C. McKinney and R.B. Meagher*

693 **Author Index**

699 **Subject Index**